PRELIMINARY TECHNOLOGY ASSESSMENT

Condensing Boilers

What is this Technology?

A condensing boiler extracts additional heat from waste gases by condensing the water vapor to liquid water, thus recovering its latent heat.

Why is GSA Interested?

ENERGY EFFICIENCY Condensing boilers can achieve up to 98% thermal efficiency compared to 70%-80% with conventional boilers. Integrated project design that allow for boilers to be used only as required by demand will yield additional energy savings.

COST EFFECTIVENESS Condensing boilers have achieved widespread adoption in Europe; however, there is little installed experience in North America. Preliminary estimates indicate that this technology will have an installed cost approximately 50% greater than conventional boilers, but a simple payback of 2 - 5 years based on energy savings.

OPERATIONS & MAINTENANCE Condensing boilers are more complicated than conventional boilers, and in Europe they have a reputation for being less reliable, requiring specialized experience for successful installation and regular service. Claims of unreliability have been contradicted by European research.

APPLICABILITY If it proves reliable and achieves predicted life cycle cost effectiveness, this technology will be widely applicable and deployable at GSA facilities.

Measurement & Verification

The Green Proving Ground program has commissioned the Pacific Northwest National Laboratory to perform measurement and verification (M&V) on Condensing Boilers at the Peachtree Summit Building in Atlanta, Georgia. Findings from that investigation will be available in September 2012.

GPG Green Proving Ground Program

The Green Proving Ground program leverages GSA's real estate portfolio to evaluate innovative sustainable building technologies. The program aims to drive innovation in environmental performance in federal buildings and help lead market transformation through deployment of new technologies.